REMARKS

Claims 1-4 and 19-20 are pending. Claim 1 has been amended and claims 5-18 have been canceled. No claims have been allowed.

Claims 1-4 and 19-20 were rejected under 35 U.S.C. 103(a) as being unpatentable over Cuadros in view of either Mayer et al. or Donadio, the Examiner referencing sections 7 and 8 of the 7/14/2004 Office Action.

Claims 1-4 and 19-20 were rejected under 35 U.S.C. 103(a) as being unpatentable over Cuadros in view of either Mayer et al. or Donadio as applied to claims 1-4, 19 and 20 above, and further in view of either Lawther or Koerner, for the reasons set forth in section 9 of the 7/14/2004 Office Action.

These rejections are respectfully traversed.

Cuadros teaches a fragmentation warhead device that has a fabric layer 24 disposed between an explosive charge 22 and shaped fragments 26. Fragments 26 can be adhered to liner 24. An outer casing 28 (e.g., a tube of solid material or an adhesive wrap) is used to retain the fragments. See column 3, lines 7-19.

Mayer teaches a shell that, in the FIG. 7 embodiment thereof, has a number of (spherical) projectiles 4 retained within a shell casing 3. Projectiles 4 are bonded together by means of foils 17 or solder 18 disposed in the spaces between projectiles 4. See column 4, lines 10-15. However, as clearly stated in claim 1 (see column 3, lines 30-32), projectiles 4 are "bearing against said inner wall of the shell casing" (i.e., shell casing 3).

Donadio teaches a keying system for interlocking components of a beehive type projectile where the keying system is initiated by the firing of the projectile. In relevant portion, flechettes 2 are retained within a cylindrical spacer 3 that is "capped" on either end by plates 5 having serrated peripheries 6. See FIGs. 1 and 3. A number of cylindrical spacer 3/plates 5 combinations are retained within a projectile 1. Spacer 3 is made from a soft or malleable metal such that when plates 5 are pressed axially into the ends of spacer 3 (as is the case when the projectile is fired), serrated periphery 6 engraves spacer 3 thereby locking spacer 3 and plate 5 to one another. See column 2, lines 12-27.

Lawther teaches a fragmentation munition having a single-layer outer casing 16. See FIG. 3 and column 2, lines 63-65. Koerner teaches an explosive projectile that also utilizes a single-layer outer casing A. See FIG. 5 and page 1, lines 32-35.

In contrast, Applicants teach and claim (in claim 1) an ordnance device that, among other things, has an outer wrap element made from a first layer and a second layer. The first layer is disposed between the second layer and the ordnance device's fragment layer. The first layer is composed of a compressible foam material of lower density than the wrap element's second layer. Support for addition of the word "foam" can be found in Applicants' originally-filed specification at page 11, lines 12-20. The compressible foam material allows the fragments to accelerate prior to contacting the outer layer to thereby reduce the negative pressure within the ordnance prior to the fragmentation thereof which, in turn, maintains fragment integrity.

None of the prior art cited by the Examiner teaches or suggests the unique combination taught by Applicants in which a two-layer outer casing has its innermost layer made from a compressible foam material to provide for fragment integrity during ordnance operation. Cuadros merely teaches a single-layer outer casing. It is respectfully suggested that the Examiner is incorrect in the contention (in section 7 of the 7/14/2004 Office Action) that Applicants' "first layer" reads on the adhesive at column 3, lines 17-19 of Cuadros. Rather, the adhesive referred to by Cuadros is between fragments 26 and the inner fabric liner 24, not casing 26.

Similar to Cuadros, Mayer teaches a single-layer outer casing as the foil 17 or solder 18 shown in the FIG. 7 embodiment. is between projectiles 4, but is not (emphasis added) layered between projectiles 4 and shell casing 3 as projectiles 4 bear against the inner wall of shell casing 3.

Spacer 3 in Donadio does not teach or suggest the use of a "compressible foam" therefor. Rather, spacer 3 is a soft metal that molds and locks to serrations 6 of plate 5 as the two are pressed together. Indeed, such molding and locking together would not be possible if spacer 3 were made from a compressible foam because a foam would fail under such stress. Thus, Donadio teaches away from Applicants' claimed compressible foam layer.

Accordingly, it is respectfully submitted that claims 1-4 and 19-20 are patentable over Cuadros in view of either Mayer et al. or Donadio.

Furthermore, both Lawther and Koerner teach single-layer outer shell casings. Thus, neither Lawther or Koerner teach or suggest a multi-layer outer wrap element as Applicants teach and claim. Accordingly, it is respectfully submitted that claims 1-4 and 19-20 are patentable over Cuadros in view of either Mayer et al. or Donadio, and further in view of either Lawther or Koerner.

In view of the art of record, the claims remaining in the case are considered to patentably distinguish thereover.

It is submitted in view of these remarks that all grounds for rejection have been removed by the foregoing amendment. For the hereinabove reasons, Applicants solicit an early and favorable response. Please apply any charges or credits to deposit account 50-0967.

Respectfully submitted,

SCOTT R. BOALICK
Attorney for Applicants
Reg. No. 42,337

Naval Surface Warfare Center
Dahlgren Division
Office of Counsel, Code XDC1
17320 Dahlgren Road
Dahlgren, VA 22448-5000
(540) 653-8061